

Remarks

Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application, in light of the following remarks and pursuant to 37 C.F.R. § 1.112, are respectfully requested. Claims 3-8 and 22-30 have been cancelled without disclaimer or prejudice, and claims 1, 2, 9, 11, 12, 17-21, and 31-36 have been amended. This application presently contains claims 1, 2, 9-21, and 31-36. No new matter is added by these amendments. Support for the amendments may be found in the original claims and throughout the specification, *e.g.*, at page 7, line 11 through page 11, line 31; page 16, line 3 through page 26, line 18; and Examples 3 and 5. Applicant respectfully submits that these amendments put the application in condition for immediate allowance or appeal.

Applicant respectfully thanks the Examiner for returning the Examiner-initialed copy of Form PTO-1449 that was filed on December 17, 2002. Applicant also thanks the Examiner for returning the initialed copy of page one of Form PTO-1449 that was filed on November 20, 2001. Applicant notes, however, that the Form PTO-1449 filed on November 20, 2001 consisted of three pages, but that Applicant has received the initialed copy of only page one of three. Applicant therefore respectfully requests that the Examiner return the initialed copies of the second and third pages of the Form PTO-1449 filed on November 20, 2001.

Applicant maintains that the restriction of claims 1-36 is improper. The Office asserts that Groups I and II are distinct because the DNA of Group I can be used in a method other than that of Group II. Applicant respectfully asserts that the Examiner has nevertheless failed to meet his burden of showing that claims 1-29 and 31-36 should not be examined together under MPEP § 806.05(f). Section 806.05(f) states that a process of making a product and the product made may be examined together so long as (a) the process is an obvious process of making the product and the process can not be used to make other and different products; or (b) the product cannot be made by another and materially different process. For example, the Office has submitted no proof of the following: (1) that the claimed processes for modifying the saturated fatty acid content of host cells are not obvious methods of making such cells; (2) that the claimed processes can be used to make other and different products or (3) that the modified cells can be

made by another and materially different process. Moreover, Applicant asserts that no undue burden would be imposed by combining the search and examination of claims 1-29 and 31-36. However, in order to facilitate prosecution, Applicant has elected claims 1-21 and 31-36 and acknowledges that the restriction requirement is made final. As such, non-elected claims 22-30 have been cancelled without prejudice or disclaimer to the underlying subject matter.

Applicant acknowledges the objection to Claim 32 as improperly depending on a claim yet to be recited. As suggested by the Examiner, Applicant has amended claim 32 to recite "Claim 31" instead of "Claim 35". Applicant therefore respectfully requests withdrawal of this objection.

Rejections under 35 USC § 112 – Written Description

Claims 1, 3-21, and 31-36 stand rejected under 35 USC § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one of skill in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Office alleges that Applicant has failed to describe a "representative number" of isolated polynucleotides encoding a polypeptide having KAS activity, which would be required to satisfy the breadth of sequences encompassed by the claims. Office Action at pages 3-4. Applicant respectfully disagrees. However, in order to facilitate prosecution, Applicant has amended the claims to remove the limitation that the polypeptides must have KAS activity.

The purpose of the written description requirement is to ensure that the inventor had possession of the claimed subject matter, *i.e.* to ensure that the inventor actually invented what is claimed. *Gentry Gallery Inc. v. Berkline Corp.*, 134 F.3d 1473, 45 U.S.P.Q.2d 1498, 1503 (Fed. Cir. 1998); *Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997); *In re Alton*, 76 F.3d 1168, 1172, 37 U.S.P.Q.2d 1578, 1581 (Fed. Cir. 1996). If a person of ordinary skill in the art would, after reading the specification, understand that the inventor had possession of the claimed invention, even if not every nuance, then the written description requirement has been met. *In re Alton*, 76 F.3d at 1175, 37 U.S.P.Q.2d at 1584. A person of ordinary skill in

the art, *e.g.*, a molecular biologist, would, after reading the present specification, understand that the Applicant had possession of the nucleic acid molecules of the claimed invention.

The Federal Circuit has elucidated a test for written description wherein a genus of nucleic acids may be described by a structural feature that distinguishes members of the claimed genus from non-members of the claimed genus. *Regents of the University of California v. Eli Lilly and Col.*, 119 F.3d 1559, 1568-69, 43 U.S.P.Q.2d 1398, 1406 (Fed. Cir. 1997). Applicant has satisfied that test for written description.

In particular, Applicant has disclosed common structural features, for example the nucleotide sequence of SEQ ID NO:1. The fact that the nucleic acid molecules may comprise sequences in addition to the sequence of SEQ ID NO:1, or variations of this sequence, is beside the point. Such modifications are readily envisioned by one of ordinary skill in the art and disclosed throughout the specification. For example, one of ordinary skill in the art could envision polynucleotide sequences complementary to any of the sequences encompassed by the claims.

In light of the detailed disclosure of the present application, one of ordinary skill in the art, after reading the present specification, would clearly know if a nucleic acid molecule contains one of the recited nucleotide sequences. Thus, claims 1-21 and 31-36 are supported by an adequate written description pursuant to the requirements of 35 U.S.C. § 112, first paragraph.

In light of these remarks, Applicant respectfully requests withdrawal of this rejection under 35 U.S.C. § 112, first paragraph.

Rejections under 35 USC § 112 – Enablement

Claims 1, 3-21, and 31-36 stand rejected under 35 USC § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. For at least all of the reasons set forth below, withdrawal of this rejection is respectfully requested.

The Office has alleged that the invention is not enabled for the scope set forth in the claims because “the screen for orthologous sequences would isolate many genes other than those of interest.” Office Action at page 6. Applicant respectfully disagrees. However, in order to facilitate prosecution, Applicant has amended the claims, as noted above, without prejudice or disclaimer to the underlying subject matter.

It is well established law that patent applicants are not required to disclose every species encompassed by their claims. *See In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). However, there must be sufficient disclosure to teach those of ordinary skill in the art how to make and use the invention as broadly as it is claimed. Applicant respectfully asserts that one of ordinary skill in the art, in light of the specification as filed and what was known in the art at the time of filing, would be able to identify all of the species encompassed by the claims. For example, one of ordinary skill in the art could identify nucleotide sequences complementary to any of the sequences encompassed by the claims; nucleotide sequences comprising the sequence of SEQ ID NO:1; and polynucleotides comprising the formula $X-(R_1)_n-(R_2)-(R_3)_n-Y$. Therefore, with respect to the nucleic acid sequences encompassed by the claims, the claims are clearly enabled for such nucleic acid sequences.

Separately, the Office alleges that “achievement of reduced saturated fatty acid insoybean [sic] seeds using KAS-II from *Synechocystis* would require undue experimentation for one skilled in the art.” Office Action at page 7. The Office further asserts that “Applicant has based their claim to reduced levels of saturated fatty acids ... upon results that showed levels of saturated oils in seeds of soybean plants transformed with both KASI and KAS IV ... from the plant *C. pulcherrima* covering a range from 2.5% up to the 13% found in wild type soybean seeds.” Applicant disagrees. Applicant respectfully submits that achievement of reduced saturated fatty acid in soybean seeds would not require undue experimentation because the specification of the instant application provides data on the fatty acid levels in the seeds of plants transformed with SEQ ID NO: 1. Example 5B provides analysis of seed oils from soybean plants transformed with both the *Synechocystis* KASII and the safflower delta-9 desaturase. Specification at page 31, lines 5 through 15; and page 29, lines 7 through 16. Analysis of oil from these transgenic soybean seeds shows that the level of 16:0 is as low as that

obtained with the combined expression of the *C. pulcherrima* KASI(B) and KASIV(A) enzymes. Specification at page 31, lines 10 through 12. Applicant therefore respectfully requests that the enablement rejection on the grounds of undue experimentation be withdrawn.

The Office further alleges that “the expression of antisense beta-ketoacyl-ACP synthase is not enabling for the reduction of saturated fatty acids in general, due to the nature of fatty acid synthesis (FAS); and that the coordinate regulation of enzymes involved in FAS may act to counter disruption of homeostasis in fatty acid biosynthesis.” Office Action at page 7. The Office further invites Applicant to submit a Rule 132 Declaration containing data on the fatty acid levels in the seeds of plants transformed with SEQ ID NO: 1. Applicant respectfully disagrees with the Office’s assertion regarding coordinate regulation of enzymes involved in FAS, and respectfully submits that a Rule 132 Declaration is not required, on the grounds that the specification provides data on the fatty acid levels in the seeds of plants transformed with SEQ ID NO: 1. See the specification at page 31, lines 5 through 15; and page 29, lines 7 through 16.

In light of these remarks, applicants respectfully request withdrawal of this rejection under 35 U.S.C. §112, first paragraph.

Rejections under 35 USC § 112, Second Paragraph – Claim Indefiniteness

Claims 2-8, 10-21, 31, 33-36 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Office Action at page 8. Applicant respectfully traverses these rejections.

The Office alleges that Claims 2-8 are indefinite in reciting “An isolated polynucleotide” because the limitations of Claim 1, from which Claims 2-8 depend, indicate “that there is one distinct polynucleotide claimed.” Office Action at page 8. In order to facilitate prosecution, Applicant has amended claim 2 to recite “The isolated polynucleotide.” Applicant further notes that claims 3-8 have been cancelled without prejudice to the underlying subject matter. Applicant therefore requests withdrawal of this rejection.

The Office further alleges that Claims 2-8, 10-21, 31, 33-36 stand rejected under 35 U.S.C. § 112, second paragraph, “as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” Office Action at page 8. It is unclear to Applicant what the Examiner has concluded is indefinite. However, Applicant disagrees with the Office’s characterization of Claims 2-8, 10-21, 31, 33-36 as indefinite. Applicant respectfully requests clarification of the grounds of this rejection.

Rejections under 35 USC § 101 – Patentable Subject Matter

Claims 9 and 17-21 stand rejected under 35 U.S.C. § 101 as being allegedly directed to non-statutory subject matter. Office Action at page 8. The Office alleges that “[t]he DNA of Claim 9, since it has not been isolated by the hand of man reads as a product of nature, thus falling outside the five classes of patentable subject matter.” Office Action at page 9. The Office further alleges that because Mendelian inheritance dictates that a transgenic plant will produce some progeny that lack the transgene, Claims 17-21 encompass “plants and seeds that are indistinguishable from plants and seeds that would occur in nature.” Office Action at page 9. Applicant respectfully disagrees. However, in order to facilitate prosecution, Applicant has amended Claim 9 to recite “An isolated polynucleotide.” Applicant has further amended Claim 17 to recite “wherein said transgenic plant”; Claims 18 and 20 to recite “A transgenic seed”; and Claims 19 and 21 to recite “A transgenic progeny,” and “A transgenic plant,” respectively.

In light of these remarks, applicants respectfully request withdrawal of this rejection under 35 U.S.C. §101.

Rejections under 35 USC § 102(b) - Kaneko T. *et al*

Claims 1-8 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Kaneko T. *et al.*, Genbank Accession number S77464 submitted June 1996 from Kaneko T. *et al.*, DNA Research, Vol. 3, pp. 109-136, June 19, 1996. For at least all of the reasons set forth below, withdrawal of this rejection under 35 U.S.C. §102(b), is believed to be in order.

It is a well-established principle of patent law that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “In determining that quantum of prior art disclosure which is necessary to declare an applicant’s invention ‘not novel’ or ‘anticipated’ within section 102, the stated test is whether a reference contains an ‘enabling disclosure’” *In re Hoeksema*, 399 F.2d 269, 158 USPQ 596 (CCPA 1968).

Applicant respectfully asserts that Kaneko *et al.* does not teach every element of the claims, either expressly or inherently, and that therefore the Office has failed to present a *prima facie* case of anticipation under 35 U.S.C. §102(b). Whatever else Kaneko *et al.* describes, Genbank Accession number S77464 and Kaneko T. *et al.*, DNA Research, Vol. 3, pp. 109-136, do not expressly describe an isolated polynucleotide comprising the nucleotide sequence comprising SEQ ID NO: 1.¹ Furthermore, Applicant strongly disagrees with the Office’s assertion that the protein sequence described in Genbank Accession number S77464 “inherently teaches” the polynucleotide sequence of SEQ ID NO: 1. The Office is reminded that, in the context of obviousness, “[a] prior art disclosure of the amino acid sequence of a protein does not necessarily render particular DNA molecules encoding the protein obvious because the redundancy of the genetic code permits one to hypothesize an enormous number of DNA sequences coding for the protein.” *In re Deuel*, 51 F.3d 1552, 1558, 34 USPQ2d 1210, 1215 (1995). By analogy, because a reference that discloses a protein sequence will teach an enormous number of potential DNA sequences, that reference cannot by itself inherently specify the one correct DNA sequence while excluding the enormous number of other potential DNA sequences that could code for the same protein. *See, e.g., In re Meyer*, 599 F.2d 1026, 1031 (C.C.P.A. 1979) (holding that the genus “alkaline chlorine or bromine solution” did not anticipate the later claimed species “alkali metal hypochlorite,” because “the genus

¹ Applicant notes that Kaneko T. *et al.*, DNA Research, Vol. 3, pp. 109-136, 112, refers to a web site: “additional information on the *Synechocystis* genome are provided in Cyanobase (<http://www.kazusa.or.jp/cyano/cyano.html>).”

would include an untold number of species”). Applicant respectfully asserts that a person of ordinary skill in the art would not be able to identify the sequence of SEQ ID NO: 1 from the description provided with Genbank Accession number S77464, or from Kaneko T. *et al.*, DNA Research, Vol. 3, pp. 109-13. Therefore, Kaneko *et al.* does not teach every element of the claims, and is not a proper 102(b) reference.

In light of these remarks, Applicant respectfully requests withdrawal of this rejection under 35 U.S.C. § 102(b)

Rejections under 35 U.S.C. § 102(b) – Ferri, S. *et al*

Claims 1, 7-8, 10-11, 14-16, and 18-21 stand rejected under 35 USC § 102(b) as allegedly anticipated by Ferri S. *et al.*, WO98/32770. For at least all of the reasons set forth below, withdrawal of this rejection is believed to be in order.

Applicant respectfully brings to the Office’s attention that the Office Action mailed January 2, 2003 refers to “Column” and “Line” designations that are not present within this reference as cited (*i.e.*, PCT documents are not divided by columns). See Office Action at page 10. Applicant further notes that the “Column” and “Line” designations correctly correspond to locations within the U.S. patent corresponding to the National Stage of the above-referenced PCT (which is Ferri *et al.*, U.S. Patent 6,200,788). Applicant has therefore enclosed an Information Disclosure Statement and PTO-Form 1449 in order to make U.S. Patent No. 6,200,788 (Ferri *et al.*) of record in the instant application. Applicant further directs the substantive response to alleged rejections under 102(b) to Ferri *et al.*, U.S. Patent No. 6,200,788.

Applicant respectfully asserts that Ferri *et al.* does not teach every element of the claims, either expressly or inherently, and that therefore the Office has failed to present a *prima facie* case of anticipation under 35 U.S.C. § 102(b). For example, whatever else Ferri *et al.* describes, it does not describe an isolated polynucleotide comprising the nucleotide sequence comprising SEQ ID NO: 1.

In light of these remarks, Applicant respectfully requests withdrawal of this rejection under 35 U.S.C. § 102(b).

Rejections under 35 USC § 102(b) – Knauf et al.

Claims 1, 7-8, 10-21, and 31-36 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Knauf V. *et al.*, U.S. Patent No. 5,510,255. For at least all of the reasons set forth below, withdrawal of this rejection is believed to be in order.

Applicant respectfully asserts that Knauf *et al.* does not teach every element of the claims, either expressly or inherently, and that therefore the Office has failed to present a *prima facie* case of anticipation under 35 U.S.C. § 102(b). Whatever else Knauf *et al.* describes, it does not describe an isolated polynucleotide comprising the nucleotide sequence comprising SEQ ID NO: 1. Furthermore, Applicant also notes that, whatever else Knauf *et al.* describes, Knauf *et al.* does not describe a plant wherein a seed from the plant contains less than about 3.5% weight percent saturated fatty acid. Knauf *et al.* therefore does not teach the plants of claims 32, 34, and 36. Applicant respectfully asserts that Knauf *et al.* therefore fails to teach all of the limitations of claims 1, 10-21, and 31-36.

In light of these remarks, Applicant respectfully requests withdrawal of this rejection under 35 U.S.C. § 102(b).

Rejections under 35 USC § 103 – Knauf et al. in view of Kaneko et al.

Claims 1-8, 10-21, and 31-36 stand rejected under 35 USC § 103 as being allegedly unpatentable over Knauf *et al.* U.S. Patent No. 5,510,255 in view of Kaneko T. *et al.*, DNA Research, Vol. 3, pp. 109-136. For at least all of the reasons set forth below, withdrawal of this rejection is believed to be in order.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicant respectfully asserts that the Office has failed to establish a *prima facie* case of obviousness because the Office has not provided an adequate explanation of the suggestion or motivation to combine the teachings of Kaneko *et al* and Knauf *et al*. The Office alleges that one of ordinary skill in the art would have been motivated to substitute the beta-ketoacyl-ACP synthase II gene discussed by Knauf *et al*. with the beta-ketoacyl-ACP synthase II gene discussed by Kaneko *et al* in light of Knauf *et al*s. purported discussion of the importance of their gene for genetic engineering of plants. Applicant respectfully disagrees. Whatever else Knauf *et al*. describes, Knauf *et al*. provides no suggestion or motivation to use a KASII gene from the cyanobacterium *Synechocystis*, in place of a plant KAS II gene. In fact, Knauf *et al*. teaches away from the suggested combination of references, because Knauf *et al*. only discusses the isolation and use of KASII and delta-9 desaturase genes from plants such as *S. oleracea* (column 18, line 42), *C. tinctorius* (column 50, lines 27-30), *Brassica campestris* (column 3, lines 59-60), and *Ricinus communis* (column 26 line 43). Applicant therefore respectfully disagrees with the Office's assertion that one of skill in the art would have been motivated to combine the teachings of Kaneko *et al*. and Knauf *et al*.

Applicant also respectfully asserts that the Office has failed to establish a *prima facie* case of obviousness because there would have been no reasonable expectation of success, at the time the invention was made, in combining the teachings of Kaneko *et al* and Knauf *et al*. Applicant respectfully points out that, as described above, Knauf *et al*. teaches the isolation and use of KASII and delta-9 desaturase genes from plants. One of skill in the art would therefore have no reasonable expectation of success that a cyanobacterial KASII gene would function sufficiently well in plants to produce altered fatty acid levels.

Finally Applicant respectfully asserts that the Office has failed to establish a *prima facie* case of obviousness because the combined teachings of Kaneko *et al*. and Knauf *et al*. do not teach or suggest all the claim limitations. As described above in the arguments addressing the Office's 35 U.S.C. §102(b) rejections, whatever else Kaneko *et al*. and Knauf *et al*. describe, neither reference describes an isolated polynucleotide comprising the nucleotide sequence comprising SEQ ID NO: 1. Furthermore, Applicant also notes that, whatever else Knauf *et al*. and Kaneko *et al*. describe, Knauf *et al*. and

Kaneko *et al.* do not describe a plant wherein a seed from the plant contains less than about 3.5% weight percent saturated fatty acid. For the foregoing reasons, Applicant therefore respectfully asserts that the Office has failed to establish a *prima facie* case of obviousness for Knauf *et al.* in view of Kaneko *et al.*

In conclusion, the Office has failed to meet even one of the three requirements to establish a *prima facie* case of obviousness.

In light of these remarks, Applicant respectfully requests withdrawal of this rejection of claims 1-8, 10-21, and 31-36 under 35 U.S.C. § 103 for purportedly being unpatentable over Knauf *et al.* in view of Kaneko T. *et al.*

Rejections under 35 U.S.C. § 103 – Ferri *et al.* in view of Kaneko *et al.*

Claims 1-8, 10-11, 14-16, and 18-21 are rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Ferri S. *et al.*, WO98/32770, in view of Kaneko T. *et al.*, DNA Research, Vol. 3, pp. 109-136. Office Action at page 12. Applicant notes that, for the reasons described above in the response to the 35 U.S.C. §102(b) rejections over Ferri *et al.*, the substantive response to alleged rejections under 35 U.S.C. § 103 to Ferri *et al.* in view of Kaneko T. *et al.*, will be directed to Ferri *et al.*, U.S. Patent No. 6,200,788. For at least all of the reasons set forth below, withdrawal of this rejection is believed to be in order.

Applicant respectfully asserts that the Office has failed to establish a *prima facie* case of obviousness because there would have been no reasonable expectation of success, at the time the invention was made, in combining the teachings of Kaneko *et al.* and Ferri *et al.* Applicant respectfully points out that, whatever else Ferri *et al.* discusses, Ferri *et al.* does not discuss any working examples of expressing a heterologous KAS gene in plants. Furthermore, Ferri *et al.* does not discuss any working example showing that the expression of a KAS gene in a transgenic host cell can cause an alteration in the ratios of saturated and unsaturated fats. See, *e.g.*, Example 3, column 8, line 34 through column 10, line 15. One of skill in the art would therefore have no reasonable expectation of success that the cyanobacterial *Synechocystis* KASII gene would function if expressed in plants.

Applicant also respectfully asserts that the Office has failed to establish a *prima facie* case of obviousness because neither Kaneko *et al.* or Ferri *et al.*, either combined or taken together, discuss or suggest all of the claim limitations. As described above in the arguments addressing the 35 U.S.C. § 102(b) rejections, whatever else Kaneko *et al.* and Ferri *et al.* discuss, neither reference discusses a nucleic acid sequence comprising the sequence of SEQ ID NO: 1.

In conclusion, the Office has failed to meet each of the criteria for establishing a *prima facie* case of obviousness.

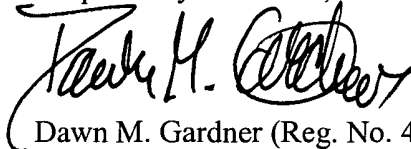
In light of these remarks, Applicant respectfully requests withdrawal of this rejection of claims 1-8, 10-11, 14-16, and 18-21 under 35 U.S.C. §103, for purportedly being unpatentable over Ferri *et al.* in view of Kaneko *et al.*

Conclusion

In view of the foregoing arguments and amendments, each of the presently pending claims is believed to be in immediate condition for allowance. All of the stated grounds of rejection have been traversed, accommodated, or rendered moot. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and pass this application to issue. The Examiner is encouraged to contact the undersigned at 202.942.5234 should any additional information be necessary for allowance.

It is not believed that extensions of time or fees for net addition of claims are required beyond those that may otherwise be provided for in the documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account Number 50-2387, referencing Docket Number 16518.087. Applicants likewise authorize a charge to Deposit Account Number 50-2387 for any other fees related to the present application that are not otherwise provided for in the accompanying documents.

Respectfully submitted,



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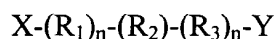
Marked-up Version of the Claims

WHAT IS CLAIMED IS:

1. (Amended) An isolated polynucleotide selected from the group consisting of:
- a) [A nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;
 - b)] A nucleotide sequence comprising SEQ ID NO: 1; and
 - [c) A nucleotide sequence which has at least about 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - d) A nucleotide sequence that hybridizes, under stringent conditions, to SEQ ID NO: 1 or a fragment thereof; and
 - e)] b) A nucleotide sequence complementary to the nucleotide sequence of (a)[, (b), (c), or (d);
- wherein the polynucleotide encodes a polypeptide having KAS activity.]

2. (Amended) [An] The isolated polynucleotide of claim 1 comprising SEQ ID NO:1.

9. (Amended) An isolated polynucleotide; wherein said polynucleotide comprises the formula:



wherein,

at the 5' end, X is hydrogen; and

at the 3' end, Y is hydrogen or a metal;

R₁ and R₃ are any nucleic acid residue;

n is an integer between 1 and about 3000;

and R₂ is the nucleic acid sequence set forth in SEQ ID NO: 1.

10. (Reiterated) A nucleic acid construct comprising a promoter functional in a host cell operably linked to the polynucleotide of claim 1.
11. (Amended) [A] The nucleic acid construct according to claim 10, wherein said polynucleotide is operably linked in an orientation relative to said promoter selected from the group consisting of sense and antisense.
12. (Amended) [A] The nucleic acid construct according to claim 11, wherein said polynucleotide is operably linked to a construct encoding for a desaturase enzyme.
13. (Reiterated) The nucleic acid construct according to claim 12, wherein said construct encoding for a desaturase enzyme encodes for a delta-9 desaturase enzyme.
14. (Reiterated) A host cell modified by introducing the nucleic acid construct of claim 10.
15. (Reiterated) The host cell of claim 14, wherein said host cell is a plant host cell.
16. (Reiterated) A transgenic plant, or any part thereof, comprising the host cell of claim 15.
17. (Amended) The transgenic plant, or any part thereof, of claim 16, wherein said transgenic plant is selected from the group consisting of *Brassica*, soybean and corn.
18. (Amended) A transgenic seed from the transgenic plant of claim 16.
19. (Amended) A transgenic progeny from the transgenic plant of claim 16.
20. (Amended) A transgenic seed from the progeny of claim 19.
21. (Amended) A transgenic plant, or any part thereof, from the seed of claim 18.

31. (Amended) [A] The plant according to claim 17, wherein said plant [consists of] is a soybean [seed] plant.

32. (Amended) [A soybean seed] The plant according to claim [35] 31, wherein [said] a seed from said plant contains less than about 3.5% weight percent saturated fatty acid.

33. (Amended) [A] The plant according to claim 17, wherein said plant [consists of] is a corn [seed] plant.

34. (Amended) [A corn seed] The plant according to claim 33, wherein [said] a seed from said plant contains less than about 3.5% weight percent saturated fatty acid.

35. (Amended) [A] The plant according to claim 17, wherein said plant [consists of] is a *Brassica* [seed] plant.

36. (Amended) [A *Brassica* seed] The plant according to claim 35, wherein [said] a seed from said plant contains less than about 3.5% weight percent saturated fatty acid.